US AIR FORCE MEDICAL SERVICE

# DIGEST

Spring 1991
Vol. 42, No. 1

## Citizen Airmen of the National Guard

## Americans At Their Best

US AIR FORCE MEDICAL SERVICE

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Front cover: **(Top)** Sgt. Larry R. Middleton, dental assistant with the 123rd Tactical Airlift Wing, Kentucky Air National Guard, sees a dental patient during his Desert Storm deployment to Malcolm Grow USAF Medical Center, Andrews AFB, Md. **(Bottom)** Sgt. Vicki Bryant with the 121st Tactical Air Command Hospital, Ohio Air National Guard, works in an actual operating room during her two-week duty with U.S. Southern Command elements in Soto Cano AB, Honduras.

## *Message from the Surgeon General*

# Operation Desert Storm: A Total Force Success

Although Operation Desert Storm has concluded, the contributions of the men and women of the Air Force Medical Service will not be soon forgotten. We were prepared—equipped, trained and ready—to treat casualties in a worst-case scenario, but, thankfully, that scenario did not materialize.

Although casualties were minimal, we still came home with some important lessons learned. First, we reaffirmed the value of medical readiness training. Precious time away from patient appointments to conduct training enabled us to deploy faster than ever before. It allowed us to put up an air transportable hospital and have it operational within 24 hours. And it prepared us for chemical attacks that never took place—but could have.

We learned that our equipment investment was sound. The Deployable Medical System (DEPMEDS) equipment, temper tents and ISO shelters performed as they were intended. Our "turn-key" contingency hospitals were set up and ready to go, and the aeromedical evacuation system performed in its usual smooth fashion. We were fortunate to have this opportunity to test our wartime medical system without having to fully employ it.

Some lessons learned show our weak spots. For example, we know that we need to streamline our data and call-up procedures for reservists, to better match skills and requirements.

Perhaps the most important lesson from Desert Storm is that the success of our wartime mission depends on the contributions of the Air National Guard and Air Force Reserve. We felt their presence keenly in the theater of operations, in our contingency hospitals in Europe, and back home in our peacetime hospitals. Guard and Reserve members comprised approximately 50 percent of our deployed overseas manpower and fulfilled 97 percent of our aeromedical evacuation requirement. In addition, by backfilling our hospitals at home, they ensured our ability to maintain services for our patients. I commend all of them for their outstanding performance. We were right all along—the Total Force policy works.

To all of you in the Air Force Medical Service—active duty, Guard and Reserve—well done! You have made America very proud.

Monte B. Miller

**MONTE B. MILLER**
**Lieutenant General, USAF, MC**
**Surgeon General**

*Training and Serving*

# The Air National Guard Heads South

**Col. Duane R. Gilbertson, DC**

*"A major priority is our overseas training and nation-building exercises, which have become very significant and kind of a trademark of what the Guard started doing in the 1983–84 time period in Central America. These missions have spread beyond Central America to the West Indies and the Caribbean where we go help, whether it's a road-building project, providing medical assistance, or rebuilding schools and community centers."*

*—Lt. Gen. John B. Conaway*
*Chief, National Guard Bureau*

The Air National Guard possesses a tradition of humanitarian efforts as old as the United States. From the earliest days of our country, citizen soldiers have answered the cry for help every day by fighting forest fires, assisting in the aftermath of natural disasters, and protecting property and life. The Guard now provides assistance to foreign countries by working with military task forces and participating in Medical Readiness and Training Exercises. The medical personnel of the Air National Guard play a key role as representatives of the United States in international humanitarian initiatives.

*Dentist from the 180th Tactical Clinic, Ohio Air National Guard, examines Honduran patient.*

## Joint Task Force Participation

The focus of international efforts to date has been on deployments for Joint Task Force-BRAVO, which is collocated at Honduras' Soto Cano AB. While in Honduras, Air National Guard medical personnel augment the U.S. Army Joint Task Force-BRAVO (JTF-B) Medical Element. JTF-B provides assistance to the Honduran Ministry of Health by offering medical and surgical care to needy citizens; care is given at JTF-B on a referral basis. Experience with the JTF-B provides excellent training for Air National Guard medical personnel.

The Guard medical personnel are tasked with caring for U.S. Air Force, Army and Navy personnel. They also provide care upon request to Honduran soldiers and civilians. In addition, the medics participate in activities peculiar to the JTF-B mission: providing assistance in a Stasis Ulcer Clinic for Honduran citizens; deploying on medical exercises to remote areas to furnish medical services to Honduran civilians; and assisting in environmental surveys, both on-site and at remote stations. These task force initiatives offer Guard members an opportunity to obtain valuable, real-world medical training as well as render a humanitarian service to Honduran citizens.

The medical element of JTF-B is located in a collection of wooden buildings with very Spartan features. In fact, the inpatient ward of the medical element, which contains 12 beds, does not have running water or plumbing fixtures. The operating room used by the medical element consists of an air transportable surgical suite

maintained on a permanent basis. Various components of the medical element, including sections for pharmacy, orthopedics, radiology and dentistry, are all located in separate wooden structures in the medical element compound.

Despite the austere conditions, members of JTF-B provide excellent medical support through clinical activities and outreach programs into surrounding villages. Various clinics are conducted each week at the medical facility with the appropriate referral from Honduran Ministry of Health physicians. All patients enter via the DeValles Clinic located on the perimeter of the base where Honduran military doctors screen the civilians arriving for health care. The Air National Guard extend their support to regions outside the base through medical exercises conducted in the living environment of the citizens. These clinical activities and outreach programs result in positive interaction between members of the host country and American forces.

*Grateful Hondurans await treatment from the 180th Tactical Clinic in September 1989.*

## Medical Readiness and Training Exercises

As part of their participation in JTF-B, Air National Guard medical personnel conduct Medical Readiness and Training Exercises (MEDRETEs). MEDRETEs, conducted in support of operations in various countries such as Honduras and Panama, give U.S. military personnel an opportunity to advance their skills in diagnosis and treatment of illnesses common to rural, and often isolated, third-world populations. In these joint operations with host nations, a professional medical team goes to a designated remote location to conduct a sick-call or a walk-in clinic. Although they can vary in makeup, MEDRETE teams usually consist of physicians, medical NCO's, dental personnel, nurses, veterinary personnel and preventive medicine staff.

The nature and scope of the MEDRETE program is determined by the needs of the host country and the capability of U.S. military units available to help meet those needs. Depending on the needs-capability equation, the scope of the MEDRETEs may range from providing acute medical care for minor illness to a program involving 1) health education for prevention of common medical and dental conditions; 2) immunization of humans and animals; 3) dental care; and 4) the evaluation, management and referral of more complex medical conditions. Public health authorities agree that emphasis on health education and prevention best uses scarce resources when considering the overall health and well-being of the community.

The MEDRETE serves a dual purpose. First, it is a nation-assistance program designed to help in the growth of the host country's infrastructure. For example, the JTF-B medical element commander emphasizes the Army's intention of offering assistance versus supplanting the Honduran medical system and creating a dependency situation. Secondly, the MEDRETE allows U.S. military personnel to acquire training and improve operational efficiency. The goal of this approach is to generate goodwill among the indigenous population, representatives of their government and U.S. forces.

In a MEDRETE covering three days from Soto Cano AB to remote sites in Honduras, designated members of the 180th Tactical Clinic of the Ohio National Guard experienced tremendous success in both areas of assistance and training. The medical/personal health element saw 738 patients; the dental element saw 88 pa-

tients; and the immunization/veterinary element gave 189 immunizations and saw 320 animals. "We had a wonderful sense of being able to help people less fortunate than ourselves," said TSgt. Natalie J. Heninger, the senior medical technician. "I would love to go again." By continuing to enhance the existing Honduran health system, medics hope to increase Honduran capability to meet the basic health needs of all its people.

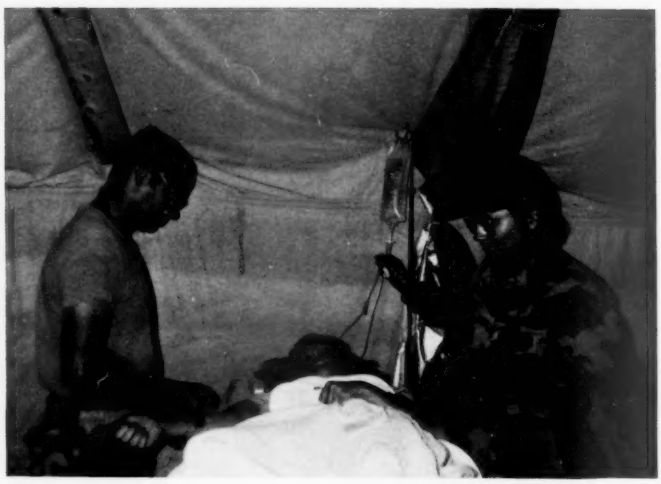
In addition to providing assistance to the Hondurans, the Ohio ANG medical personnel gained valuable experience. Commander of the 180th Tactical Clinic, Col. (Dr.) Milton G. Mutchnick, referred to the MEDRETE as an "unforgettable and rewarding training occasion for all the people in my unit." South and Central America offer ideal environmental exposure to climate, terrain, austere field conditions and epidemiology. Both MEDRETEs and Task Force initiatives benefit all participants, citizens and visitors alike, and build good rapport among them along the way.

### Conclusion

The list of countries requesting medical assistance is expanding rapidly and now includes Bolivia, Costa Rica, El Salvador and Guatemala. As the list increases, so will the humanitarian efforts of the United States and the Air National Guard. The ANG's involvement in nation-assistance exercises carries on their age-old tradition of caring for their fellow man.

*Col. Duane R. Gilbertson is the Air National Guard medical forces advisor in the directorate of medical plans and resources for the Office of the Air Force Surgeon General, Bolling AFB, D.C.*

# Medics to the Rescue in Honduras



*TSgt. Gary Eisnor and SSgt. Gail Albo administer an IV.*

When the 820th RED HORSE* Squadron deployed from Nellis AFB, Nev., to Jamastran, Honduras, in January 1990, as part of Task Force 820, they took along an air transportable clinic. Although the clinic's staff members—a doctor and three independent duty medical technicians—came from various units, they worked together in support of these Air Force combat engineers and their construction projects in Honduras. The staff's support included helping the neighboring Hondurans as well as caring for the needs of the engineering camp.

### Supporting Neighboring Hondurans

The medical team traveled in a convoy with the engineers and set up the clinic while the engineers set up the base camp on a Honduran army post only six miles from the Nicaraguan border. As the task force set up their camp, Capt. (Dr.) Mark D. Zimmerman visited the Honduran army camp. "I told Lt. Col. Terencio

*RED HORSE - Rapid Engineer Deployable Heavy Equipment Operations Repair Squadron Engineering

Gomez that if any emergencies came up while we were there that we'd help them if we could," said Dr. Zimmerman. "I had checked out the nearest hospital at Danli a few days earlier and spoken with the physicians in case we needed any help from them."

"We were checking local medical resources as we set up, just in case of a problem," said TSgt. Gary A. Eisnor, explaining Dr. Zimmerman's visits. Knowledge of local medical resources proved vital when the 52-year-old Honduran army battalion vice commander showed up complaining of stomach pains before the clinic was fully operational. Dr. Zimmerman examined the vice commander on a gurney.

"His symptoms did not match his complaints. What I found was much worse; it looked like a heart attack," said the doctor. The doctor along with two medics, two communications specialists and an interpreter drove the vice commander to the hospital at Danli where they took X-rays and an EKG. "We determined that he was critical, but they did not have the resources to treat him," said Dr. Zimmerman.

Using the Air Force ambulance, the team drove the patient to the nearest hospital with resources to treat him, which was in Tegucigalpa, the nation's capital, about 80 kilometers away. Doctors at the hospital discovered that he had a coronary artery disease and kept him for two weeks. Because of the work of the two medics and three task force members, the Honduran army battalion vice commander survived and recovered. The five men received Joint Service Medals for their quick, decisive, life-saving action.

Later, in an effort to further aid their neighboring Hondurans, the medics trained 11 Honduran army medics. They taught classes in bandaging, splinting, giving shots, treating fractures and recognizing diseases such as heat stress and malaria.

## Supporting Task Force Members

Besides their additional help to the Hondurans, the medical team had no easy task supporting a squadron of 200 HORSEmen, about 150 Reservists, 34 communications specialists, 23 security policemen and other augmentees. Although the task force's manning fluctuated depending on the number of reservists, who rotated in two-week shifts, the clinic averaged 90 patients a week throughout deployment. "Most of it was routine stuff, cuts and scrapes," said MSgt. Henry P. Dula, III, independent duty medical technician. The worst case was when a civilian consultant had to be evacuated because of a heart condition.

The air-conditioned air transportable clinic accommodated four beds without crowding. The ambulance and medical team's tent was used if necessary. About 100 different types of medications were available to treat various illnesses. "I think we had one of the best ATCs in the Air Force. We had basic trauma capacity, a small laboratory and could provide primary care services," said Dr. Zimmerman.

## Additional Support

Although the medical staff worked primarily at the clinic, they also worked closely with the task force's pest control specialist to eliminate disease-carrying pests, such as mosquitoes and rats. "Pest management was important because in areas like that, there is a high possibility that insects, such as mosquitoes, which can carry malaria, will transmit diseases," said Sergeant Eisnor. Across the border in Nicaragua, there was a chloroquin-resistent form of malaria. The medical staff learned about it before the deployment and ordered pills containing chloroquin and primaquin, which the task force members took once a week.

Several times a day, the medical technicians monitored temperature and humidity. Heat during the day ranged from the 80s in January to 103 in May. Dehydration resulted from the extreme heat, and a few people needed IVs. The medical staff also routinely checked the camp's sanitation and the kitchen's procedures to be certain that foods were served and stored at the right temperature. The medical technicians inspected the water filtration system and the tents daily for cleanliness. Before the task force members used a hotel or restaurant, swimming pool or bar, the medical staff inspected it. They did a thorough job.

Outside the engineering camp, Dr. Zimmerman and Sergeants Dula and Eisnor once visited a local orphanage to help the task force members improve the facility's conditions. While the captain and sergeants helped put down a layer of sand over the dirt in the backyard and gravel in the driveway, the task force members repaired the sewage and water lines and provided potable water. After finishing repairs, the medical team conducted medical exams. "The children had been drinking untreated water, which may have given them parasites," said Dr. Zimmerman. "Compared to American kids, they were doing very poorly, but compared to just surviving, they were doing well."

## Conclusion

The RED HORSE squadron could not have done its job in Honduras without the valuable help of the air transportable clinic staff. The clinic and its staff deployed to protect the task force members' health, but the role of the doctors and medical technicians went far beyond routine care of the sick and injured. They became ambassadors of good will fulfilling the medical mission at the highest level of excellence.

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*At the time this article was written, SSgt. Jeffrey Pines was a public affairs representative and member of Task Force 820 in Honduras. Sergeant Pines is now chief, media relations for the 836th Air Division, Davis-Monthan AFB, Ariz.*

# Col. (Dr.) Dennis A. Higdon

"I've been recommending joining the Guard for 25 years to everybody who will listen," says Air National Guard Col. (Dr.) Dennis A. Higdon who enthusiastically promotes his choice of a second career.

Dr. Higdon joined the Air National Guard in 1965 as a college student at Middle Tennessee University in Murfreesboro, Tenn. "I joined because the Air Guard met my needs," he said, "and I stayed in through college and medical school and went into practice."

After finishing medical school at the University of Tennessee in Memphis and performing his internship at Methodist Hospital, Dr. Higdon was commissioned in the unit that he now commands, the 164th Tactical Clinic in Memphis, Tenn. Continuing in his civilian pursuits, Dr. Higdon completed his residency in anesthesiology at Vanderbilt Hospital in Nashville, Tenn., and entered private practice at Methodist Hospital in Memphis with the group he is a member of today.

Combining military and civilian duties provides a unique opportunity that Dr. Higdon finds satisfying. "It's important to remember that everyone in the Guard who is a traditional Guardsman is really a civilian first, and through that second career, they're able to do things that civilians can't do," he said.

For example, civilians don't get the chance to help officially in state emergencies or civil disturbances. During Dr. Higdon's 26-year career, he has been called up three times for short periods in support of the state.

As a Guard member, Dr. Higdon also participated in a two-week deployment in 1986 to Soto Cano AB in Honduras. "We spent several days going out into the field and working in small Honduran villages," he said. "In a period of eight hours or so a day, it wasn't unusual for us to see 300 or 400 individuals." Dr. Higdon appreciated the opportunity to train with the Army and administer aid to the Hondurans. "That was probably the most fulfilling thing I've ever done as a physician," he said.

Dr. Higdon was called up for a federal mission for the first time in his career during Operation Desert Storm. His unit was activated on Jan. 25, 1991, and they deployed to Malcolm Grow USAF Medical Center at Andrews AFB, Md., four days later.

"A great number of medical personnel from Malcolm Grow deployed to England to operate a contingency hospital," he said. "When we arrived, the anesthesia department, which had previously consisted of about 12 anesthesia care providers, was manned by only one person." One week after the arrival of the Guard members, the operating rooms and labor and delivery services at Andrews AFB were functioning again.

The situation in the Andrews AFB anesthesiology department held an interesting twist for Dr. Higdon. The acting chairman was a captain, suddenly in charge of coordinating a group of colonels. He was also the son of Dr. Higdon's senior partner in private practice. "I've known my boss since he was 12 years old!" said Dr. Higdon. "It was fun for us to be back together again. Capt. Alan E. Curle did a magnificent job of heading the department. We were all pleased that we had him there to help organize us," said Dr. Higdon.

As a member of the Air National Guard, Dr. Higdon knows he is also a vital contributor to the Air Force. "More than ever, the call-up has proven that the ANG medical service has a necessary part to play in the Air Force medical mission," he said. "Without the Guard, the Air Force wouldn't have been able to do the things it did to fulfill its medical mission." Dr. Higdon is proud of the success of the Guard during the recent operation. "We've proven that our mission is one that is necessary and that we can perform it," he said.

Even more than the opportunities of the Guard, Dr. Higdon appreciates the people of the Guard. His favorite aspect of the Air National Guard is "being associated with people who feel the same way about their country" as he does. "It seems to me that the Guard is full of people who have a strong sense of responsibility to their nation and their community, and I enjoy being around people like that," he said.

"If you love your country," Dr. Higdon said, "being a Guardsman is a great way to express it!"

# Follow the Light

***The Air Force Produces a Physician Recruiting Spot***

**1st Lt. Kimberly S. Coleman**
**Dianne D. Reeves**

*Cameramen film a scene of Capt. (Dr.) James Welch approaching the mysterious light.*

A young man puts on a pair of boots and begins walking down a mysteriously lit, haze-filled hallway toward an unknown destination. He is drawn toward a ray of light. Snapshot glimpses of the young man peering through a microscope or pointing an eye-light toward a patient show he is a doctor practicing medicine. Suddenly the camera focuses on a sleek F-16 as it skims over the desert at lightning speed and flies off into the sunset. Cockpit close-ups reveal the doctor, now flyer. The message: If you want to practice medicine in a stimulating atmosphere, follow the light and call the U.S. Air Force.

For the first time ever, the Air Force has produced a television public service announcement that specifically targets flight surgeons and other medical service officers. Recruiting highly qualified physicians for the Air Force is the preeminent challenge that the Recruiting Service faces today, and this television spot marks an effort to step up physician recruitment.

Last year, the Air Force garnered $4.9 million in public service television time by producing high-quality public service announcements. The Air Force relies entirely on public service announcements rather than on paid television advertising and, therefore, must design creative, professional and interesting spots so that commercial stations will air them.

## Spotlight on the Performer

More than 50 people from three different agencies were directly involved in the successful release of this television spot to recruit qualified physicians. Capt. Howard Brooks, the Air Force advertising account executive, had the tough job of choosing a flight surgeon to take part in the commercial. He talked to Air Force surgeons all over the country before selecting Capt. (Dr.) James Welch. What was the deciding factor? Dr. Welch's sense of humor. "Besides having excellent medical credentials and the right look, he had a sense of humor to endure the tedium of doing take after take," said Captain Brooks.

*Dr. Welch waits to begin the first in-studio shots.*

Dr. Welch, originally from Stockton, Calif., graduated from Baylor School of Medicine in Houston, Texas. After completing his internship at Travis AFB, Calif., in obstetrics and gynecology, he applied for the flight surgeon program. "I heard that being a flight surgeon was a really fun job," Dr. Welch said. "I didn't know how much fun until I started doing it myself." Dr. Welch, stationed at George AFB, Calif., enjoys his medical practice. "The patient group is great. It's a young healthy group of pilots and their families . . . . Being a flight surgeon is like being the ultimate family doctor."

Dr. Welch appreciated having a part in an effort to promote his Air Force occupation. "Filming the commercial was the most fun I've had since I've been in the Air Force," he said. "I feel the spot emphasizes the numerous possibilities that are available to Air Force physicians or really any citizen interested in joining the Air Force."

## Spotlight on Production

Choosing a performer is only one of the many steps involved in the process of making an Air Force television

spot. Everything begins with a meeting of the Air Force account team early in the year to discuss strategies and approaches to advertising. After decisions are reached, a producer begins reviewing production company tapes to find the ones with the shooting style that fits the project. The producer then contracts and takes bids from various production companies vying for the Air Force job.

Next, the art director and other creative minds get together to compile ideas that will meet Air Force needs, and they illustrate those ideas on multiple story boards. Story boards contain all copy, spoken word and action planned for the spot. The story boards use colorful pictures to show what the action shots will look like. During the entire process, careful watch is kept on the project to ensure it stays in line and on target with an established budget.

During the production of this particular commercial, the director, Joe Murray, worked closely with pilots to discuss the accuracy of shots. He conceived the notion of using air-to-air cinematography of an F-16 in flight projected as an image on an enormous screen behind the studio model of an F-16 to portray actual flight. It looked so real, it could even fool an F-16 pilot! The on-site filming of an F-16 in flight took place near Luke AFB, Ariz. The rest of the commercial was produced in a television studio in Los Angeles, Calif.

During production, the director relies heavily upon the line producer, whose job includes everything from script writing to organizing travel and logistics. The line producer ensures that everyone having anything to do with any aspect of production is taken care of so that they can work to their fullest potential.

Also on the set is the propmaster. The propmaster works with grip crews to create necessary effects, such as using dry ice to give the illusion of contrails coming out of the engine of a model plane. The ingenuity and skillful craftsmanship of these individuals contribute to the overall success of taping. Finally, when the creation is complete, the commercial's promotion and acceptance rely on the creativity of the marketing and distributing team and advertising agency.

## Spotlight on the Result

Everyone involved in the production of the Air Force public service announcement played an important role in helping advance the Air Force's mission to recruit exceptional physicians. This exciting and visually effective spot helps promote the high-tech, professional image of the Air Force, and creates interest and excitement about Air Force medicine among physicians. It goes a long way toward helping recruiters put more physicians in Air Force blue.

*1st Lt. Kimberly S. Coleman is deputy chief, publicity programs, Headquarters, USAF Recruiting Service, Randolph AFB, Texas. Dianne D. Reeves is a writer for Headquarters, USAF Recruiting Service, Randolph AFB, Texas.*

*Capt. (Dr.) James Welch gives a thumbs up after completing the cockpit footage.*

# Air Force Liver and Pancreas Transplantation Program: Medical Progress Offers New Hope

**Lt. Col. Gregory J. Jaffers, MC**

Wilford Hall USAF Medical Center, Lackland AFB, Texas, is the oldest existing military transplant center. Organ transplantation work began at Wilford Hall in 1963 when Dr. J. R. Smith, a plastic surgeon interested in limb replantation, performed the first organ transplant at the facility. The first attempted transplant was unsuccessful; however, the second recipient later that year survived a kidney transplant, and the organ donated by his mother continued to function for years. Since then, Wilford Hall has performed more than 500 kidney transplants.

On May 22, 1989, Wilford Hall became the first Department of Defense medical facility to perform liver transplantation. To date, Wilford Hall surgeons have performed 13 liver transplants. Anticipated incidence of hepatic failure within DOD could result in 35 to 40 liver transplants per year at Wilford Hall.

Pancreatic transplantation in DOD began at Wilford Hall on April 11, 1989. Since that time, seven diabetic patients have received combined pancreas and kidney transplants at Wilford Hall. Five of these seven patients remain free of insulin injections with normal kidney function. Wilford Hall expects to perform 20 to 25 pancreas transplants yearly within the next several years.

The introduction of multi-organ transplantation within the military arose in response to the rising number of DOD beneficiaries in need of organ replacement. Advances in organ transplantation have made organ replacement a successful and routine procedure in many medical centers across the country.

Transplantation of the liver or the pancreas has historically been a technical challenge associated with significant morbidity and mortality. Recent advances in organ preservation, improvements in surgical techniques and refinements of immunosuppressive medications to prevent rejection of the transplanted organ by the host represent changes that have contributed to the recent widespread success of liver and pancreas transplantations. They also represent new hope for patients afflicted with hepatic failure and diabetes mellitus.

## Organ Procurement and Preservation

Because the blood vessels of the liver and the pancreas are intimately associated, medical science once believed that the organs could not be removed separately from the same donor and transplanted successfully into different recipients. Today, the routine accomplishment of this procedure disproves that theory.

The procedure often requires complicated vascular reconstruction to optimize the use of both organs. Should a complex anomaly appear to jeopardize the use of either the liver or the pancreas during surgical removal, the liver takes priority—use of the liver results in a life-saving transplant, while the functions of the pancreas can be fulfilled with insulin injections.

A further restriction to pancreatic and, to some degree, liver transplantation is the limitation in the time that the organs can be preserved and still function after being transplanted. Conventional storage solutions, composed of either plasma or water with minerals, allowed for safe preservation of the liver and pancreas for only 10 to 12 hours. Beyond that time, the majority of livers and pancreata would function poorly or not at all.

The transplantation team at the University of Wisconsin achieved a breakthrough in organ preservation with the development of a new preservation solution.

*The organ transplant team at Wilford Hall USAF Medical Center, Lackland AFB, Texas, performs a liver transplant.*

The solution permits the storage of livers and pancreata for nearly 24 hours, with consistent return of liver and pancreas function after transplantation. This extended preservation time has increased organ transplantation by allowing more time for transport and preparation of the organs for the transplant operation.

## Liver Transplantation

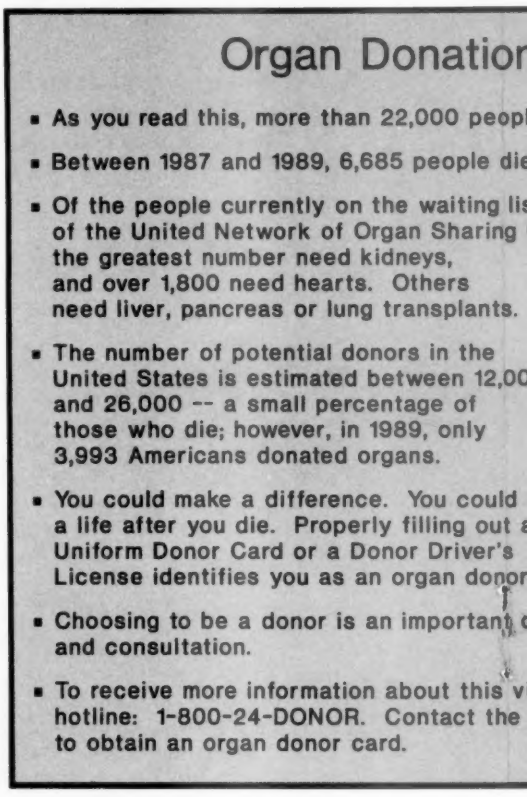
The liver is the largest organ of the body and may be the most formidable to transplant, but patients with liver failure have no options. They become jaundiced and develop bleeding difficulties and abdominal swelling that eventually leads to coma and then death. Many of these patients develop enlargement of the veins within the abdomen, making the removal of the liver particularly hazardous because of the potential for massive blood loss.

Now, however, instruments to recycle blood lost during the surgical procedure, instruments to rapidly infuse blood into the patient at more than 1,500 milliliters per minute, and other innovative devices successfully limit the use of blood products during the transplant and improve intraoperative management of the patient undergoing liver replacement. For example, using a bypass pump to decompress the enlarged veins within the abdomen during the transplant procedure significantly reduces blood loss when the diseased liver is being removed.

## Pancreatic Transplantation

Work with pancreatic transplantation began in an attempt to eliminate the need for exogenous insulin therapy and to prevent the serious complications of diabetes. The first pancreas transplant was performed in 1966 at the University of Minnesota. Although the early attempts to transplant this organ were uniformly unsuccessful, many pancreatic transplants have been successfully performed since.

Initially, major impediments to the success of this form of organ replacement included clotting of the pancreas, difficulties in handling pancreatic secretions and detecting recipient rejection of the organ after


Organ Donation
As you read this, more than 22,000 peopl
Between 1987 and 1989, 6,685 people die
Of the people currently on the waiting lis
of the United Network of Organ Sharing
the greatest number need kidneys,
and over 1,800 need hearts. Others
need liver, pancreas or lung transplants.
The number of potential donors in the
United States is estimated between 12,00
and 26,000 -- a small percentage of
those who die; however, in 1989, only
3,993 Americans donated organs.
You could make a difference. You could
a life after you die. Properly filling out a
Uniform Donor Card or a Donor Driver's
License identifies you as an organ donor
Choosing to be a donor is an important
and consultation.
To receive more information about this v
hotline: 1-800-24-DONOR. Contact the
to obtain an organ donor card.

transplantation.

Clotting of the blood vessels within the pancreas was previously a common cause for failure of the pancreas transplant. Swelling within the pancreas after transplantation resulted in poor blood flow through the vessels. This swelling could compromise the lumens (i.e., cavity) of the minute pancreatic vessels. Attempts to improve flow by creating an artificial connection between arteries and veins near the tail of the pancreas were met with limited success.

It is now known that clotting of the blood vessels in the pancreas is related to swelling in the organ before removal from the donor as well as after transplantation in the recipient. Liberal use of protein-containing solutions during these two surgical procedures limits the swelling of the pancreas.

Additionally, since the splenic vessels are of large caliber and provide major branches to the pancreas, the spleen is removed from the donor in continuity with the pancreas and transplanted with the pancreas to ensure optimal flow in the pancreatic blood vessels. The spleen is removed before completion of the transplant once the pancreas appears to be without any edema.

Innovative techniques to handle pancreatic secretions now overcome the difficulty of pancreatic juices impeding successful transplantation. Insulin is not the only substance produced by the pancreas. The pancreatic duct releases other secretions that normally empty into the intestines to play a role in digestion.

Initially, drainage of the fluids back into the intestines was attempted. Although this strategy was associated with a higher incidence of infections in these immunocompromised patients, it is still preferred by some centers today.

Injection of the ducts with polymers, such as latex or prolamine, to occlude them is a somewhat successful strategy. However, this method may result in fibrosis or scarring of the pancreas, with eventual loss of the insulin-producing islet cells. The result is a diminished insulin reserve.

In a different technique, the duct is left open within the abdominal cavity, allowing the peritoneum to absorb the secretions. In some individuals, however, the abdomen may become severely distended, making this option less than ideal.

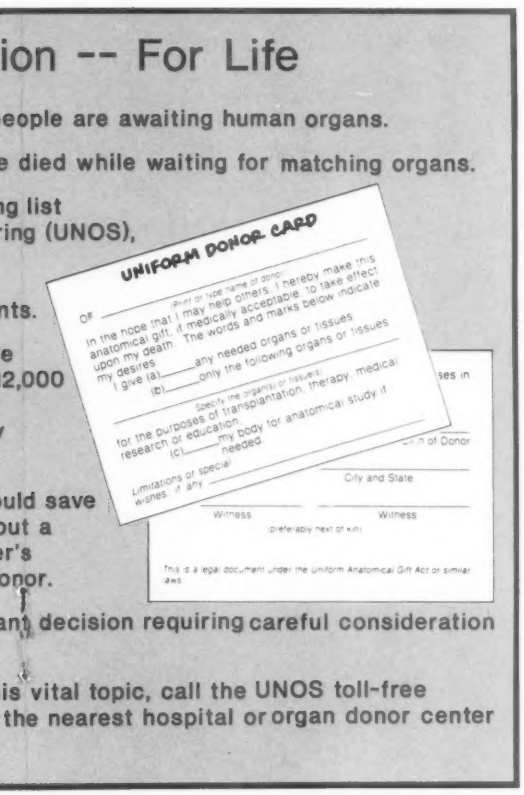
The latest method of diverting the pancreatic juices is by connecting the duct to the urinary tract. Initially, the ureter, which carries urine from the kidney to the bladder, provided the connection, but more recently the bladder itself has been used. This latter method has proved to be the most successful technique so far for handling pancreatic secretions.

Presently, the majority of pancreas transplant centers in the United States transplant a short segment of the donor duodenum in continuity with the pancreas, since the pancreatic duct drains into this portion of the intestines. The duodenum is then sewn to the bladder where the pancreatic juice is mixed with the urine and eliminated.

This unique method of diverting the pancreatic secretions offers a means of detecting pancreatic rejection. In its early stage, pancreatic rejection is very difficult to detect, and by the time the rejection process becomes obvious, the pancreas is rarely salvageable. Draining the pancreatic secretions into the urine provides a way to evaluate the functioning of the pancreas. When the normal pancreatic secretions begin to diminish, injury to the pancreas is occurring, and early treatment of rejection may be instituted. These urine tests, however, are not foolproof.

Many centers simultaneously transplant a kidney from the same donor into the diabetic patient. Most of these patients already show evidence of kidney disease resulting from their diabetes and would soon require dialysis.

The kidney and pancreas commonly reject together, but the use of serum creatinine makes detection of kidney rejection possible at an early stage. Once the kidney rejection is found, antirejection therapy is instituted to treat rejection in both organs. The success rate of pancreatic transplantation is much higher when the kidney and pancreas are transplanted together from the same donor.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UNIFORM DONOR CARD
In the hope that I may help others, I hereby make this anatomical gift, if medically acceptable, to take effect upon my death. The words and marks below indicate my desires.
I give (a)_____ any needed organs or tissues
(b)_____ only the following organs or tissues
for the purposes of transplantation, therapy, medical research or education.
(c)_____ my body for anatomical study if needed.
Limitations or special wishes, if any
City and State
Witness
Witness
This is a legal document under the Uniform Anatomical Gift Act or similar laws

*Wilford Hall surgeons transplant a liver. Since May 1989, they have completed 13 liver transplants.*

## Immunosuppressive Medications

Perhaps the biggest challenge to transplantation is the elimination of the rejection process, whereby the host's immune system progressively destroys the transplanted organ. To diminish the likelihood of rejection, centers use immunosuppressive medications. However, these medications are far from ideal and are associated with a high risk for infectious complications and other side effects.

Introduction of the potent immunosuppressive medication cyclosporine has contributed to the success of liver and pancreas transplantation within the last decade. Compared to previously used medications, cyclosporine reduces the incidence of transplant failures and infectious complications, although not without side effects. Additionally, the use of OKT3 monoclonal antibody to reverse rejection episodes salvages many transplants that would otherwise fail.

A new drug, FK-506, has proven to be more effective than cyclosporine, and holds promise as an immunosuppressive medication for transplantation. Further refinements in immunology hopefully will allow transplantation without the need for prolonged immunosuppressive medications in the future.

## Conclusion

The establishment of numerous liver and pancreas transplantation centers across the country attests to the increasing success of these forms of therapy for liver failure and diabetes mellitus.

Currently, 70 to 80 percent of patients who receive liver transplants will survive in the first year after transplantation. Many will be rehabilitated and lead productive lives. For these patients, transplantation is the only option for survival.

More than 80 percent of pancreas organs, when transplanted with a kidney from the same donor, function after the first year of transplantation. Unlike those with liver transplants, these patients have an alternative when the pancreas fails. The long-term effects of pancreatic transplantation on the quality of life for diabetic patients are not fully known.

Current evidence demonstrates a trend toward stabilization or improvement in the processes that ravage the diabetic patient. Additional studies and observation are needed to determine the role of pancreatic transplantation in treatment of the diabetic.

Further understanding of the immunology of transplantation will help reduce the side effects of immunosuppression and will continue to improve the success of transplantation. Much remains to be learned in this new and challenging field of surgery.

*Lt. Col. Gregory J. Jaffers is the chief, department of surgical transplantation, Wilford Hall USAF Medical Center, Lackland AFB, Texas.*

## *View From the Top*

The *Digest* Interviews

# Brig. Gen. (Dr.) Robert A. Buethe Jr.

On March 7, 1991, the *Digest* interviewed Brig. Gen. Robert A. Buethe Jr., Tactical Air Command (TAC) surgeon, as the situation in the Gulf was winding down and troops were preparing to come home. General Buethe gives a "look back" at TAC medics' involvement in the Persian Gulf War. He talks about challenges faced, lessons learned, successes realized and goals now set for the future.

**Digest:** General Buethe, now that the Gulf War is over, how do you view the performance of TAC medics in the AOR (Area of Responsibility)?

**General Buethe:** They performed in an outstanding manner. We had absolutely no problems whatsoever medically or with equipment, housing, billeting, tentage or anything else like that. Although we weren't used much, which was good, we were there, ready to do our job if we needed to. It has been an outstanding deployment.

**Digest:** What was the greatest challenge for the troops?

**General Buethe:** The number one major problem was not food, housing, being away from home or anything like that, but actually, the biggest challenge for the medics was boredom—not being able to do what they were trained to do. In fact, the incidence of disease and non-battle injuries ran about one-fourth to one-third of the predicted rate. If it weren't for athletics, the medics would have had very little to do, but that doesn't mean they weren't doing anything at all. For one thing, they trained extensively. They did a lot of chemical training and a lot of triage. Also to their credit, many of them went to their various wing commanders and said, "What else can we do for you that would help lift your load?" We had medics handling MWR and security activities, helping the deployed wing commanders with their overall mission. I'm proud of what they did.

**Digest:** How do you think the air transportable hospital system worked?

**General Buethe:** I think it worked magnificently and met our needs exactly as designed. You must remember that the air transportable hospital in the 100- or 50-bed size, or any increment smaller than that, is not designed to be a large medical center like Wilford Hall or Scott. It is designed to support the deployed wing by stabilizing patients, returning minor injuries to the wing commander as quickly as possible, and evacuating to a higher level of care those who can't be handled by the hospital. It's a small community hospital. If you keep that in mind, they did exactly what they were supposed to do, and the equipment in the hospital was exactly what we wanted it to be.

**Digest:** So the early press reports from the AOR criticizing the quality of medical equipment were not accurate?

**General Buethe:** You'll see that none of that press was directed at the Air Force. Most of the equipment in our air transportable hospitals was less than two years old. Now, that is not to say that an individual provider or practitioner wouldn't want something additional or their favorite instrument or tool. But that's not the point. The equipment in the hospitals was up-to-date and modern. This was the first time we performed surgery in these hospitals, and we didn't know whether the laboratory modules, the surgery modules, the X-ray modules were going to work, but everything worked like a charm.

**Digest:** If we could move now to the issue of personnel, were the number and mix of providers adequate?

**General Buethe:** Yes, if you go back to my original premise: What is the air transportable hospital (ATH) for and what is it designed to do? Basically, it's designed to take care of the combat wing. It is not supposed to take care of a mechanized division of the Army or a Marine Corps expeditionary force. It's supposed to take care of the tactical air force's fighter wing. In that scope, what we sent was fine. Also, we had our 250-bed hospital set up in Oman. It was manned by P. K. Carlton (Col. Paul K. Carlton, commander of the USAF Medical Center Scott, Scott AFB, Ill.) and his staff from Scott, but TAC equipment was there when they arrived. It was a tertiary care hospital and manned the way we wanted it to be. Although not the ultimate tertiary care hospital, it was certainly a level a lot higher than our ATHs. Thankfully it was not used either, but it was ready.

One thing that we learned early in this particular deployment was that OB/GYNs are important. There were a lot of women in the theater, and they had the usual female problems. OB/GYNs are not on the normal manning document for an ATH, but we sent them anyhow. Now we are going to make sure that OB/GYNs are always in future theaters.

**Digest:** Can you explain some ways that you feel medical readiness training really paid off?

**General Buethe:** In the tactical air forces, TAC and certainly PACAF and USAFE, mobility is one of the biggest things we practice. It costs us a lot in time, money and patient visits. It costs thousands of dollars to take an ATH out of the warehouse and set it up, but part of our IG function is to see if we can indeed mobilize, and we do it over and over. When the horn really blew, when the deployment order came, it was an absolutely smooth process.

The first three to deploy, Langley, Shaw and MacDill, were under imminent threat of attack, and our people had those hospitals set up literally overnight. You cannot do that unless you train well. The investments of money and time paid off, and even the negative affect on patient access during the peacetime mission was worth the result.

You also have to remember that we are air transportable. We deployed and were the only U.S.-controlled hospital system during the first 30 or 35 days of the crisis. *Mercy* and *Comfort* got there around day 35. They and a lot of the big Army facilities had to come by sea. They arrived eventually, and they are magnificent facilities. However, when you project a force into a foreign country thousands of miles away, bringing in air and ground forces, you've got to have medical capability with it—and we were it, the air transportable medical elements.

Keeping the hospitals air transportable is my job. When the various staffs come back and want this or that added, we can only add whatever they wish at the expense of something else in weight and cube. That's a very testy area because everybody wants their own widget, but I don't want a land or sea transportable hospital.

**Digest:** Do you feel that the medical readiness training that you conducted prepared the TAC medics for chemical and biological warfare?

**General Buethe:** Absolutely. The whole package of training—setting up, putting on the MOPP gear, wearing it all day long, communicating in the gear, getting the signals right—it all paid off.

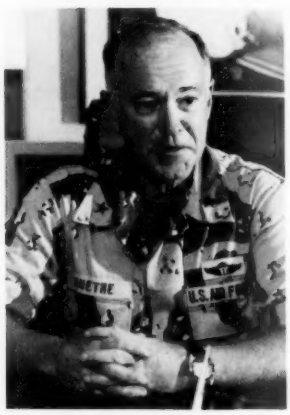
**Digest:** Would you use any lessons learned to change the medical readiness training program either in Continuing Medical Readiness Training (CMRT) or in battlefield medicine courses?

**General Buethe:** Yes. I think we are going to have to clearly define the specific mission of each of our medical units. A lot of our physicians deployed thinking they were going to be in a 1,000-bed or a 500-bed hospital, which they could have been if they had gone to Europe, but if they're going to be with tactical air forces, they're going to be in small hospitals, and they've got to think foxhole, sandbag, chemical attack, shrapnel. Since the two operations are so different, we ought to tailor our training for specifically where the unit is going to go in the next crisis or war.

**Digest:** How severely were CONUS operations affected by the deployment of TAC medical personnel?

**General Buethe:** In TAC, we left very early and were on our way in August. We had an unusual phenomenon happen when we called our Guard and Reserve component and said we needed help. From the earliest departures in August through almost the first of December, we were augmented with Guard and Reserve medical forces on a volunteer basis. Some came in Annual Training, some just literally volunteered. No call was needed until the end of November. We had some minor mission degradation that came right back up as soon as our forces arrived from the Guard and Reserve. The support from them was just outstanding. We had a couple of minor problems and inconveniences. For instance, getting the personnel oriented and billeted took a couple of days, but overall it was an amazing show on the part of the Guard and Reserve forces, for which I congratulate them.

What the Guard and Reserve did was terribly important especially when you remember the way we deploy our forces. If the Air Force goes into a combat theater or into an environment as a fighting force or as



a stabilizing force, it's got to do it quickly. That means active duty forces. At the same time, when we deploy these active duty forces, we do not have enough in reserve to cover ourselves back home. That automatically brings in the Guard and Reserve as backfill, an important although not very glamorous job. However, if the fight had gone longer in the Middle East, they would have been over there in their helmets and MOPP gear too, as replacements or as additional units, and been involved in the SCUD attacks. That's the way we're set up.

**Digest:** What can you say about the contributions of the medics who did not deploy?

**General Buethe:** There always has to be a cadre of active duty to run the facility back home. Nobody told me to close any of our hospitals back home or even degrade care. In fact, my commander's guidance to me

was to stay open and expand if needed to make sure that the families and the spouses could be taken care of. I think we at TAC did that very well. If I could just close the places back home, I could have used everybody in the theater, but we must have a cadre to stay back with the wing facilities. And also we've got to have a pool of experienced people who know what they are doing for the occasional disaster or significant loss that can happen in any war.

**Digest:** What role did the Guard and Reserve personnel play in the AOR and contingency hospitals?

**General Buethe:** We had one of our ATHs staffed by people from MAC and MAC reserve units, and they did a magnificent job. We gave them a little assistance up front, but they rolled right in and did their job, supporting a MAC wing. When reserve fighter or tanker wings came in, they brought reserve flight surgeons and squadron medical elements who did a magnificent job. They integrated right with our hospital system on the ground. Additionally, the reserves were the backbone of the aerovac system. They staffed and operated our aeromedical staging facilities, and did an absolutely superior job.

**Digest:** Can you describe for us the relationship between Air Force, Army and Navy medical units within the AOR?

**General Buethe:** A lot of people say we don't interoperate and we don't cooperate, but that is just not true. As an example, the 1st Tactical Hospital was on the ground in Dhahran early in the operation, and the Army, Navy and Marines moved a lot of folks through that aerial port; thus, we took care of them. The interoperability and the cooperation was magnificent and it worked as designed. Could we do some things better? Sure. We always could, but I think having a joint command surgeon and four component command surgeons worked very well. Those who say we need a purple suit, or some other super medical agency because we can't work together, are wrong!

**Digest:** What do you foresee as the role of TAC medical forces in the Gulf region in the future?

**General Buethe:** That will depend on the decisions of the president and the secretaries of state and defense regarding what type of residual force, if any, we will have in the theater. If the political decision is positive for residual force, medical presence will be sized according to that force. In other words, we will tailor the medical element for what is required. There is talk about prepositioning equipment there just in case we have to go back someday and certainly we're looking at all these types of situations.

**Digest:** Now that things are winding down and troops will be coming home, we will be focusing on peacetime care again. Where is peacetime care in TAC headed in the 1990s?

**General Buethe:** I see a concerted effort at cost containment and improved patient access through managed health care or catchment area management. TAC has been in that business now for a year, and from what we've seen, although the data is early, it's been a tremendous success as predicted. I would like to see that concept expanded to all TAC facilities. That will be our challenge for the next four, five or six years in TAC. It's all predicated on funding, manpower, and rolling in the base closures and all the consolidations that the chief of staff wants to do. Philosophically, we'd be going from a fee-for-service type of situation with uncontrolled CHAMPUS costs to totally managed care. If I could do that in the next three or four years in TAC, regardless of all these other issues that are happening on the periphery, that would be a major step forward in health care for the Air Force. However, if we're going to do this, we can't do it halfway. We've got to commit to it, finance it, get it going, and then we will reap the benefits.

**Digest:** Do you have any results yet from the demonstrations that have been going on for about a year now?

**General Buethe:** I know we're saving money. I can give you case after case of where we're saving thousands of dollars. When you start adding all that up, it's going to work. All we need is an investment, a little time, a few people, commitment, and we're on our way.

**Digest:** Do you have a personal message to the men and women of the Air Force Medical Service?

**General Buethe:** Medics in Tactical Air Command, all those in the TAC detachment, including our Guard and Reserve forces, did a magnificent job and I couldn't be more proud and thankful. I'm talking about not only those who sacrificed to go forward and get some desert dust on them, but those who sacrificed to stay behind. I want to make sure they all get a pat on the back. It's just been absolutely fantastic.

**Digest:** Thank you, General Buethe.

# Malcolm Grow and the Russian Connection

**George M. Watson Jr., Ph.D.**

Now that the Soviet people are being allowed to remember their czarist past, it is appropriate to recall Maj. Gen. (Dr.) Malcolm C. Grow's connection with imperial Russia. Indeed, for nearly two years (September 1915 to May 1917) during World War I, Malcolm Grow, the first surgeon general of the United States Air Force, served the czarist regime in several capacities. He was a civilian surgeon at Hussars Hospital at Tsarskoe-Selo,* Russia, and then became a commissioned officer in the Russian Army, working as the chief surgeon of the 21st Flying Column, attached to the First Siberian Army Corps. It was this experience that he would draw upon in his service with the Army Medical Corps, and later the Army Air Corps, as he sought to improve the health and living conditions of those fighting on land and in the air.

## From Philadelphia to the Russian Front

Dr. Grow was born in Philadelphia on Nov. 19, 1887, and graduated from Jefferson Medical College in Philadelphia in 1909. On a visit to Washington, D.C., in August 1915, he met with Dr. Edward Egbert, who was home on a brief leave from his position in Russia as chief surgeon of the American Red Cross hospital in Kiev. Dr. Egbert described the Russian Army's dire need for doctors. Grow was so fascinated by Egbert's discourse about the war, that, seeing an opportunity to enhance his surgical skills, at the age of 28 he decided to leave his comfortable Philadelphia practice for the Russian front.†

A month later he was in Russia with Dr. Egbert, seeking to join the imperial Russian Army. He was introduced to Dr. Vicker, the Russian chief surgeon at Hussars Hospital at Tsarskoe-Selo, which served wounded soldiers sent from the front. Dr. Vicker, explaining that he needed a vacation, asked Dr. Grow to help. The American immediately went to work as a surgeon. His first operations included draining a large brain abscess and amputating a leg at the thigh for gangrene. Grow was both impressed and astonished at the capacity of the Russian soldiers to bear pain. They "would grip the hand of one of the kindly nurses until the muscles in their arms stood out like knots, and the sister would wince with pain from the pressure, but never a word of complaint came from the soldier(s)" (1).

Grow soon gained enormous prestige by performing what he called a "grandstand play." He cured a soldier who had developed lockjaw by injecting massive doses of anti-tetanic serum into the spinal column and into a vein. The Russians, having very little serum, used only a minuscule amount and injected it under the skin. Grow had been able to commandeer a large amount of serum from an American chemist acquaintance doing business as a company representative in Russia.

One of the difficulties Dr. Grow commonly encountered at the Hussars Hospital was treating the wounds of soldiers whose bandages had not been changed within usually four days since they had left the battlefield. Many were "covered with vermin . . . . Some had gangrenous phlegmon or gas bacillus infection so severe as to require immediate amputation" (1).

Grow was restless and yearned for more active frontline service, which, with the return of the vacationing Dr. Vicker, he got. He met Col. Kalpaschnecoff, commander of the 21st Flying Column of the First Siberian Army Corps, called the "Ironside Corps" because of its battlefield accomplishments. Kalpaschnecoff, who had been a Russian Embassy attache in Washington, D.C., and spoke fluent English, warned Grow about the danger of frontline duty, mentioning that his surgeon had been recently killed by German shells. But Grow persisted and the colonel—who desperately needed a surgeon—obliged him, and cut through the bureaucracy to secure him a Russian Army commission as a captain.

*A town south of present-day Leningrad where the czar had a favorite palace that he liked to visit during peacetime.

†Russia had been allied with France since the 1904 signing of the "Entente Cordiale," and loosely aligned with Great Britain through France (Great Britain and France agreed in 1912 that if either had reason to fear an unprovoked attack, they would consult and decide what to do). Germany had been allied with Austria-Hungary since 1879 through Otto Von Bismarck's initiative in what was called the Central Powers. The war began within weeks of the Archduke Francis Ferdinand's murder in the Bosnian town of Sarajevo on June 28, 1914. Italy, closely aligned with the Central Powers in the Triple Alliance, was bribed through the promise of real estate gains to join the Allied Powers—Great Britain, France and Russia—and declared war on Austria in May 1915 and Germany the following year.

*Maj. Gen. (Dr.) Malcolm C. Grow, the first surgeon general of the U.S. Air Force, served in the Russian army during World War I.*

Grow was elated but nonetheless shaken after learning that he would be obliged to remain through unknown perils until such time as he might be "relieved of duty at the pleasure of the Army Command or until the end of the war" (1).

## Treating the Casualties of Trench Warfare

Dr. Grow admired certain customs observed by Russian soldiers in the field, such as boiling all water, which Grow surmised accounted for their small incidence of typhoid; and carrying straw rolls, about two-inches-thick, six-feet-long and two-and-a-half-feet-wide, to lie on and simply burn when soiled. Grow was also impressed with the kindness shown by the Russian Army toward captured and wounded Germans, noting that Russian officers would often visit their prisoners and ask how they were faring.

If action was what Grow wanted, he soon got it. He endured constant shelling and was introduced to the trials and terrors of trench warfare, actually participating in a nighttime raid to prevent the Germans from reinforcing the Riga-Divinsk, the scene of heavy fighting.

Camouflaged in a white operating room gown and a pillowcase to blend in with the snow, and armed with a couple of hand grenades and a pistol, he crawled out of the trench with the stretcher carriers on a 400-man foray over "No Man's Land." The huge man assigned to watch him was shot in the head by a dum-dum round. He fell and bled on Dr. Grow. The American surgeon spent several minutes in the German trenches, and then returned with the wounded, dodging barrages of enemy rockets and machine-gun fire. It was a harrowing experience.

In Grow's recollection of the return run, "we stooped low as we ran, and as I flew over the snow, I had a queer feeling in my back—a feeling of expectancy as though something were going to hit me right between the shoulders—the sort of feeling you have when you're going down a dark, lonely road at night, and you suddenly hear the patter of footsteps just behind you" (1).

The foray was successful but costly. Twenty Germans were taken and an untold number killed at a cost of eight Russians killed and 45 wounded. The Russians were most pleased with the capture of five machine guns,

since their regiments had averaged about 15 machine guns to the Germans' 80.

## Danger and Horror on the Battlefield

During the winter of 1915–1916 Grow was involved in a series of exciting events. He rode in the captured car of Prince Eitel Frederick of Germany, the Kaiser's son, who himself had narrowly escaped. He met and briefly chatted with Czar Nicholas II. And, against orders, he flew with a Russian captain on a reconnaissance exercise, dropping a bomb over German lines in a captured German aircraft, barely making it back to Russian lines as the engine suddenly stopped. Grow quickly realized the importance of aircraft in this war, especially in intelligence-gathering. His pilot had identified two new German batteries and the reoccupation of a dugout village by a new German reserve regiment.

Grow and his assistants worked stoically under appalling battlefield conditions. He did not like having huge batteries located merely 200 feet back from the dressing stations, which themselves were located only 1,500 feet from the frontline trenches, but as he surmised, "In this war military matters came first, and the care of the wounded was a secondary consideration" (1). He concluded that the Russian soldier was not properly equipped to protect himself from the biting cold of the nearly arctic climate, but, as he noted, the soldiers did not complain.

At the battle of Postovy in March 1916, Grow witnessed the horrifying results of a Russian charge against German machine guns; one regiment of 4,000 men had only 800 left after a few hours of combat. Grow's dressing tent could not accommodate all the wounded. Many had to lie in the snow wrapped only in light blankets or overcoats to ward off the cold. He and his orderlies treated many abdominal and brain wounds.

Once, as he fumbled in the light of a single candle held by a shaking orderly, attempting to tie off an artery of a soldier whose leg had been blown off, an enemy shell exploded close to the tent and huge jagged pieces tore through the canvas. Grow was especially frightened at the concussion of a second shell that rocked the tent. He nevertheless managed to tie off the artery and prepare the man for transport to the rear.

Grow himself was wounded and temporarily deafened by shell shrapnel when running to a bomb shelter. The blast also ruptured his eardrums. However, he felt fortunate, for the shell hit a tree in his direct line, sustaining most of the concussion. He credited his Russian orderly with saving his life. Under heavy bombardment, the orderly dragged the stunned physician into the shelter. Grow regained his hearing in three weeks.

Although the Russians failed to advance their lines, Grow believed that the battle of Postovy served to divert a great number of German troops from fighting the French at Verdun. He contended that his corps alone lost 50,000 men. He was awarded the Medal of St. George for his devotion to duty and bravery under fire.

After a three-week vacation back to the United States for rest, Grow returned to his unit in June 1916. The 21st Flying Column was preparing for what Colonel Kalpaschnecoff called a "demonstration attack" to prevent the Germans from reinforcing their hard-pressed Austrian allies to the south. The goal was not to pierce the German line, but merely to hold a few of the front trenches for a short time and then retreat. For Grow, the battle meant more horror: "We had to make men walk who were hideously wounded. I have seen them reel in with their jaws shot off, with both arms shot through, or with a gaping hole through the thigh" (1).

Grow was perturbed with the result of a feint operation that entailed a toll of more than 3,000 killed and wounded from three regiments, but he never lost his admiration for Russian soldiers. He believed they could

*Malcolm Grow was a member of a Red Cross delegation, such as this one, that visited Russia during the 1917 revolution.*

*The Russian Red Cross Column commandeered carts to move wounded during World War I.*

*This barn was a makeshift hospital for wounded Russian soldiers during World War I.*

tolerate "more pain without a murmur than I had believed possible for the human organism to bear. They were the most patient and enduring fellows, and as fine soldiers as I think the world has ever seen." He added, "These men simply could not be downed," even in the face of devastating losses, when 3,000 were killed in one feint operation. "They would sit in the trenches and be blown to pieces—regiment after regiment—when they did not have shells to reply to the Germans and when they could see nothing to shoot at" (1).

The Russians had very few observation aircraft, whereas the Germans possessed many. "Ours was a blind army," he noted, "unable to tell what the enemy was doing while they were aware of every move we made" (1). Grow held that despite hardships and handicaps, the Russians had captured 400,000 prisoners and taken many hundreds of miles of territory in three months. By doing this, they released the pressure on the hard-pressed Italians during the early summer of 1916.

There was one more battlefield ordeal for Grow—the gas attack. On the 9th of September 1916, at five o'clock in the morning, Grow and his orderly were roused by the sounds of another shelling. Arriving at the trenches, they saw a 50-foot-high vapor line approaching. He put on the gas mask, and just in time. His orderly, however, was not so fortunate. He had forgotten his mask and writhed in pain, kicking and screaming for about five minutes before dying. In all, more than 2,000 Russians were killed by gas that morning.

## Enter the Russian Revolution

Having found another doctor to replace him, Dr. Grow left the front for the United States in January 1917 to help Colonel Kalpaschnecoff obtain some badly needed motor ambulances. In March, while he was held up in Norway because of a submarine blockade, he received news of the Russian revolution and the abdication of Czar Nicholas II. Soon after, power was relinquished to the socialist Alexander Kerensky's provisional government. Chaos ensued, and factional fighting was the rule. The Russian people, not familiar with democratic compromise, split into antagonistic groups.

For Grow, who returned to Russia in July 1917 on a mission for the Red Cross, this revolution marked a

turning point in the attitude and appearance of the Russian soldier. A number of officers were discharged by soldier committees, and the generals who remained became powerless to enforce discipline. Grow was saddened to see this powerful fighting machine of more than 12 million men collapse within itself, not because of the Germans, but rather because of propaganda and intrigue.

Grow left Russia before the Bolsheviks triumphed in November 1917, but not before a narrow escape. The Bolsheviks besieged the hotel Astoria in Petrograd where he was staying with other foreigners and Russian officers and their families. The Russian officers fought off the revolutionaries until they ran out of ammunition, and then the mob of civilians, soldiers, sailors and marines assailed the hotel.

The Swiss hotel manager was able to persuade the mob to leave Grow and other foreigners alone by arguing that any harm to them would endanger the revolution by having countries like Great Britain and the United States declare war. Luckily, Grow was spared even though the revolutionaries raided the hotel's wine cellar and during the night slaughtered most of the Russian officers and their families. This episode was censored by the War Department from Grow's original book on the basis that there was still some hope that Russia would remain in the war, and the United States did not want to offend an ally.

## Conclusion

Anxious to quiet the internal dissent and consolidate their power, the Bolsheviks under Lenin and Trotsky sued for peace, and the Germans obliged them with the Treaty of Brest Litovsk in March 1918. The dismantlement of the Russian army soon followed, as did civil war. Grow joined the American war effort as a captain and surgeon for the 45th Artillery, Coast Artillery Corps, and went to France in October 1918 (2).

Malcolm Grow never lost his respect and admiration for the Russian soldier. His Russian experience, particularly his medical observations during battle, remained with him for life and enabled him to seek ways to improve the plight of the fighting man.

*George M. Watson Jr., Ph.D., is the chief historian, Office of the Air Force Surgeon General, Bolling AFB, D.C.*

## References

1. Grow MC. Surgeon Grow: an American in the Russian fighting. New York: Frederick A. Stokes Company, 1918.
2. Marshall, SLA. World War I. New York: American Heritage, 1985.

# Professional Board Certifications

### American Board of Internal Medicine

Capt. William E. Lyles, Air Force Institute of Technology, Wright-Patterson AFB, OH
Capt. Kimberly P. May, Air Force Institute of Technology, Wright-Patterson AFB, OH
Capt. Kenneth N. Olivier, Air Force Institute of Technology, Wright-Patterson AFB, OH
Capt. Warren C. Rizzo, Air Force Institute of Technology, Wright-Patterson AFB, OH
Capt. Jill D. Rossrucker, Air Force Institute of Technology, Wright-Patterson AFB, OH
Capt. Robert M. Saad, Air Force Institute of Technology, Wright-Patterson AFB, OH
Capt. John F. Walsh, Air Force Institute of Technology, Wright-Patterson AFB, OH
Capt. Andrew K. Wong, Air Force Institute of Technology, Wright-Patterson AFB, OH

### American Board of Pathology

Capt. Thomas H. Dougherty, Air Force Institute of Technology, Wright-Patterson AFB, OH

### American Board of Pediatrics

Capt. Robert M. Haws, Air Force Institute of Technology, Wright-Patterson AFB, OH

### American College of Healthcare Executives

Maj. John H. Yancey, USAF Medical Center Wright-Patterson, Wright-Patterson AFB, OH

### American Nurses Association

Maj. John A. Seimetz, Clark AFB, Philippines

### Federal Services Board of General Dentistry

Lt. Col. Jeffrey R. Shaefer, 600th Combat Support Squadron, Hessich Oldendorf AS, Germany

# Medical Service Awards

## Colonel Floyd M. Morris Award for the USAF Optometrist of the Year

**Maj. (Dr.) James C. Chapman** was the 1990 recipient of the Colonel Floyd M. Morris Award for the USAF Optometrist of the Year. The annual award is named in honor of the third chief of the Biomedical Sciences Corps, who was himself an optometrist. Recipients of this distinguished award are honored for their outstanding professional achievement and accomplishments, which superbly reflect the image of the Air Force Medical Service and the profession of optometry. Dr. Chapman, chief of Optometry at the USAF Clinic Peterson, Peterson AFB, Colo., is a 10-year military veteran highly deserving of this recognition for his exemplary service in the field of optometry. The award was presented at the Southeastern Congress of Optometry in Atlanta, Ga., in February 1991, by Col. (Dr.) David Simpson, associate chief, Biomedical Sciences Corps, for Optometry.

## Office of Personnel Management Director's Award for Outstanding Employee Health Services Programs

The **Health Promotion Program at Tyndall AFB, Fla.,** was one of six agencies chosen to receive the Office of Personnel Management Director's Award for Outstanding Employee Health Services Programs. The six awardees were chosen from 96 nominations and reflect a good cross-section of model Federal employees' health services programs. The awards were presented at the Symposium on Employee and Labor Relations in Baltimore, Md., Dec. 4–7, 1990.

Tyndall's award-winning program consists of extensive efforts in smoking cessation, hypertension detection and prevention, physical fitness, nutrition and healthy heart, stress management, and substance abuse prevention. The Health Promotion representatives at Tyndall AFB sponsor classes, such as smoking cessation, "Kardiac Kitchen," weight loss, and substance abuse awareness classes. They arrange base-wide activities, such as the 1989 Great American Smokeout promotion, the Gulf Coast Salute fair, Safety Day, Retirees Appreciation Day, and Healthy Heart commissary tours. They also initiate community programs, such as the "Campaign Against Cholesterol" program. The list of Tyndall's achievements is long, and their superb management of the many facets of health promotion is worthy of this special recognition.

## Sigma Theta Tau International, Inc., Media Award

**Tactical Air Command (TAC), Nursing Services,** was selected to receive the Media Award, 1990, of Sigma Theta Tau International, Inc., Honor Society of Nursing. The Media Award, presented annually, recognizes efforts and programs promoting the profession and career of nursing through the media. A highlight of the award mentioned the publicity that TAC medical treatment facilities provided in local and base newspapers on Nurses Day, May 7, 1990, concerning the contributions of nurses. During the award ceremony on Nov. 2, 1990, held at the Omni Hotel in Norfolk, Va., the command nurse's office was presented with a plaque and certificate applauding their use of the media in promoting nursing.

## Air Force Physician Assistant of the Year Award

**Maj. James L. Cary** was named Air Force Physician Assistant of the Year for 1990 recognizing his outstanding accomplishments in the areas of health care, professionalism, military officership and contribution to the Air Force community. Major Cary received this award while assigned to the Air University Regional Hospital, Maxwell AFB, Ala., as executive officer to the director of hospital services. Hospital Commander Col. (Dr.) Robert T. Jones describes Major Cary as "an accomplished problem solver with innovative ideas" and one who is "sensitive to the needs of his patients." Major Cary has been recently reassigned as a physician assistant instructor at Sheppard AFB, Texas, for the 3790th Medical Service Training Wing.

# In Memoriam

All of the men and women who gave their lives in the Gulf War deserve special tribute. We recognize particularly **Maj. (Dr.) Thomas Flagg Koritz,** the only member of the Air Force Medical Service to be killed in action. At the time of his death, he was one of only five actively flying pilot-physicians in the Air Force.

Dr. Koritz was listed as missing in action on the first day of Operation Desert Storm when the F-15E Eagle fighter bomber that he was piloting did not return from its mission over Basra, Iraq. Eight weeks later, it was confirmed that he had been killed in action during that mission.

Dr. Koritz was born Aug. 10, 1953, in Rochelle, Ill., where he attended local schools and graduated from Rochelle Township High School in 1971 as a member of the National Honor Society. After high school, he attended the University of Illinois in Champaign, Ill., where he graduated Phi Beta Kappa and cum laude in 1975 with a bachelor's degree in biology. Dr. Koritz attended medical school at the University of Illinois College of Medicine, in Rockford, Ill., graduating in 1979. Upon completing his internship in June 1980 at the University of Iowa Department of Family Practice, in Davenport, Iowa, Dr. Koritz entered the Air Force as a pilot candidate and was commissioned a 2nd lieutenant through the Officer Training School program at Lackland AFB, Texas.

After being commissioned in the Air Force, Dr. Koritz was stationed in Mississippi and New Mexico for various phases of pilot training between September 1980 and January 1982. He graduated from the F-15 Readiness Training Unit (RTU), Luke AFB, Ariz., in May 1982 as Top Gun and the outstanding graduate in his class.

After being stationed at Langley AFB, Va., as an F-15 pilot from July 1982 to June 1985, Dr. Koritz was selected for the USAF pilot-physician program. At that time, he entered the Medical Corps, completed the Aerospace Medicine Primary course at Brooks AFB, Texas, and returned to Langley to continue flying and serving as a flight surgeon with the 27th Tactical Fighter Squadron.

His next assignment, from July 1987 to June 1989, was in San Antonio, Texas, where he performed his residency and became certified in Aerospace Medicine.

Following the completion of his residency, Dr. Koritz was selected as weapons systems pilot-physician for the newly operational F-15E multi-role fighter. In July, 1989, he joined the first operational F-15E wing at Seymour Johnson AFB, N.C., where he also became the chief of flight medicine for the 4th Medical Group. In his brief time working with this new weapons system, he made many significant contributions to its safety and effectiveness. His insight and expertise led to a greater understanding of the physiological stressors associated with the night, low-level mission. After finishing F-15E training at Luke AFB, Ariz., and rapidly attaining "mission-ready" status, Dr. Koritz was deployed to the Persian Gulf on Dec. 27, 1990, as a pilot for the 335th Tactical Fighter Squadron.

Dr. Koritz' stellar career included more than 1600 flying hours, during which he was selected as a flight leader in the F-15. He also earned numerous awards, such as the Air Force Meritorious Service Medal, the Air Force Commendation Medal and the Air Force Achievement Medal. He was recognized as an Associate Fellow in the Aerospace Medical Association and was selected as the F-15 weapons system flight surgeon for Tactical Air Command. The doctor also published several articles and lectured extensively on human factors problems associated with flying high-performance fighters.

The funeral for Dr. Koritz was held at the First Presbyterian Church in his hometown of Rochelle, Ill., on Friday, March 22, 1991. He was buried with full military honors performed by a 20-member Honor Guard unit from Chanute AFB, Ill. In tribute to Dr. Koritz, Lt. Gen. Monte B. Miller, the Air Force surgeon general, said, "Our Air Force mourns the loss of a physician, pilot, scientist and friend. He will truly be missed."

Dr. Koritz is survived by his wife, Julianne, and three sons, Timothy, 8, Jon, 6, and Scott, 4.